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Stakeholder engagement to identify priority pathogens for serosurveillance in Kenya

Meeting Brief - January 2024

Key message

We engaged experts in infectious disease surveillance to help identify pathogens that should be prioritized for serosurveillance in Kenya. A carefully selected group of respondents were invited to participate in multiple rounds of consensus building engagement activities until a final list of fifteen pathogens was generated.

The pathogens in order of priority were; Measles, SARS-CoV-2, Cholera, Rift Valley Fever, HIV, Malaria, Rubella, Chikungunya, Ebola, Hepatitis B, Dengue, Typhoid, Influenza, Respiratory Syncytial Virus and Marburg.

We hope that the list represents the initial steps that could herald the development of a platform that can inform the scope of serosurveillance programs in Kenya and the larger Eastern Africa region.

Background

Serosurveillance involves the collection of blood samples to test for antibodies against a specific pathogen. Serosurveillance was especially informative in estimating the prevalence of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in varied populations. These estimates helped inform Government policies around mitigation of the COVID-19 pandemic.

Serosurveillance has the potential to generate evidence to inform immunization program reach/ gaps, estimate disease burden, and predict the risk of outbreaks. The latter is key for epidemic/ pandemic preparedness efforts. However, as resources are limited, there is a need to select the pathogens for which large scale surveillance should be prioritized.

We engaged a diverse group of informed stakeholders to participate in generating a ranked list of pathogens that should be prioritized for serosurveillance in Kenya. Target respondents included heads of divisions at the Ministry of Health, focal disease surveillance persons from select counties, academics, research experts and international organisations involved in infectious disease outbreak investigation and mitigation.

Broad objective

Using a consensus-based decision-making process, to develop a ranked list of pathogens prioritized for serosurveillance in Kenya.

Specific objectives

I. To explore the opinions of diverse stakeholders on pathogen prioritization for serosurveillance in Kenya
II. To explore the rationale behind the ranking of individual pathogens
III. Using a modified Delphi process, to achieve a consensus list of ranked pathogens prioritized for serosurveillance in Kenya.

Methods

We contacted purposively selected respondents inviting them to participate in individual interviews. A stakeholder engagement workshop was held on 18th October 2023. This was after all individual interviews had been completed and the data aggregated. Workshop attendees, who included some that had participated in the interviews, had the opportunity to review both the spectrum of pathogens identified at individual interviews and the top ten pathogens arising from the ranking activity.

During group sessions, participants debated the list of ten pathogens as emerged from the individual interviews with reference to the prioritization criteria. Groups had liberty to change the ranking as they deemed fit and could also introduce a new pathogen to the list if it met the prioritization criteria. There was a caveat that any new pathogen introduced into the list would require dropping off an existing pathogen to keep the group list at ten pathogens.

Finally, participants reconvened back to the plenary where the scores form each group were amalgamated and the new ranking displayed on a screen. Figure 1 below summarizes the methodology process.

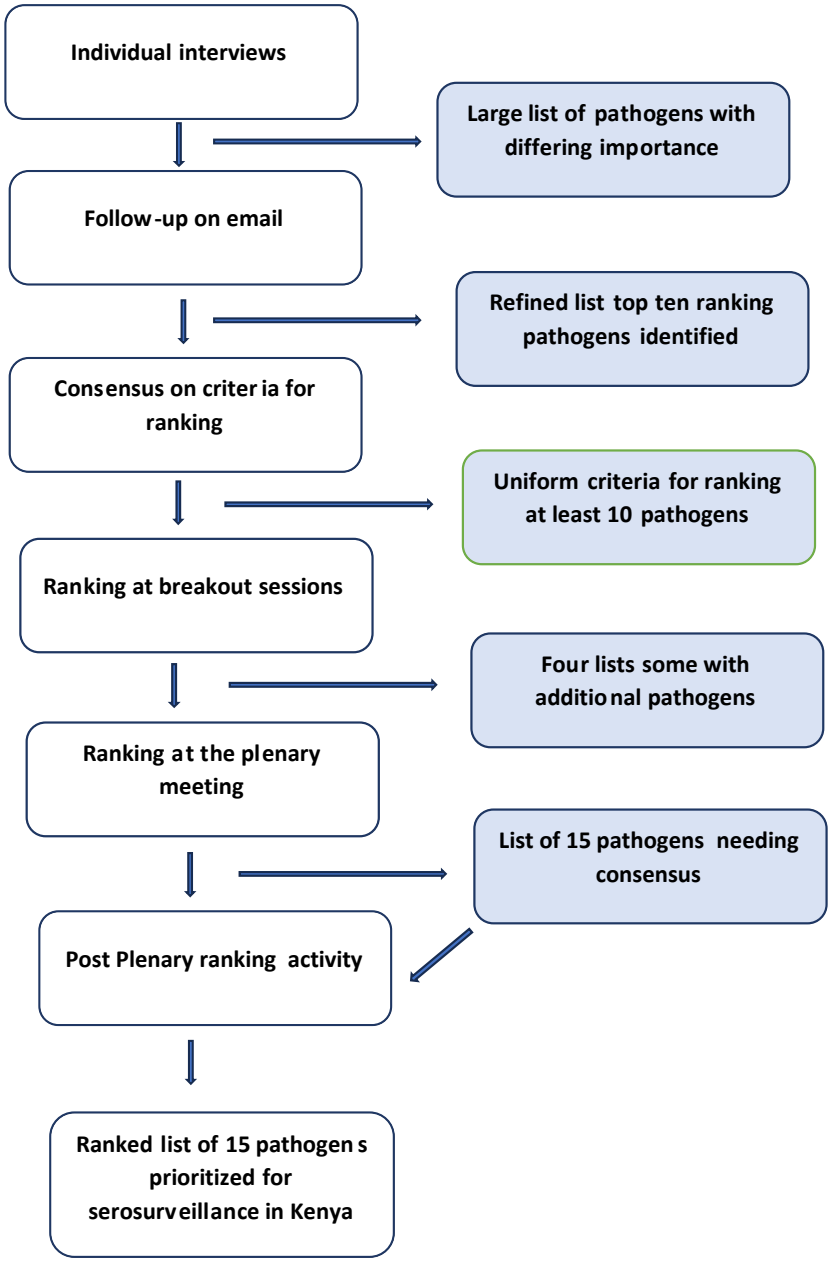


Figure 1: Study methodology

Results from individual interviews

Figure 2 summarizes the participant response rate. From the interviews, respondents identified multiple pathogens that they would want prioritized for serosurveillance in Kenya.

Figure 3 is a tree map that provides a visual representation of all the pathogens as ranked by respondents. Table 1 is the list of the top ten pathogens ranked from highest to lowest priority, based on cumulative scores.

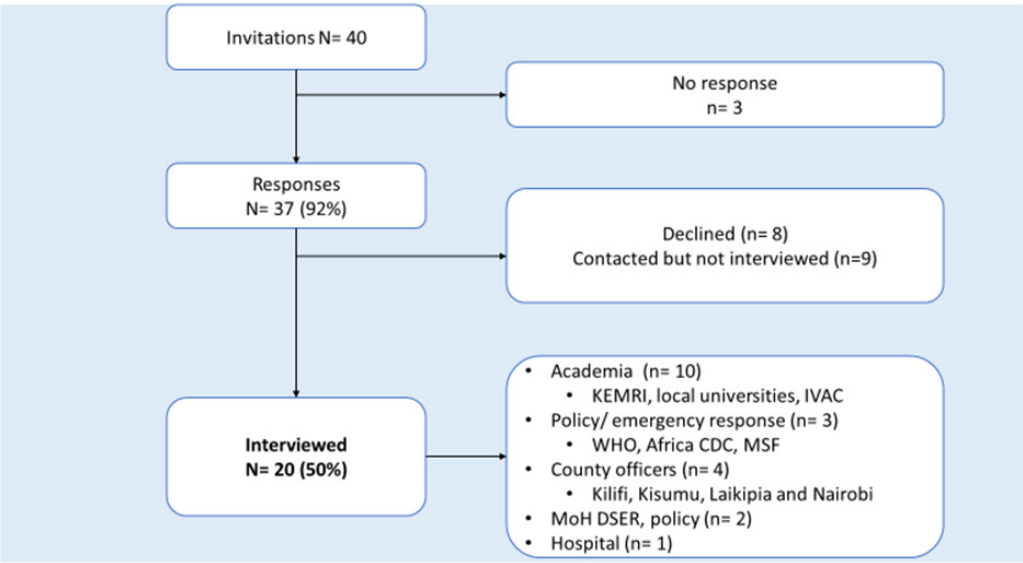
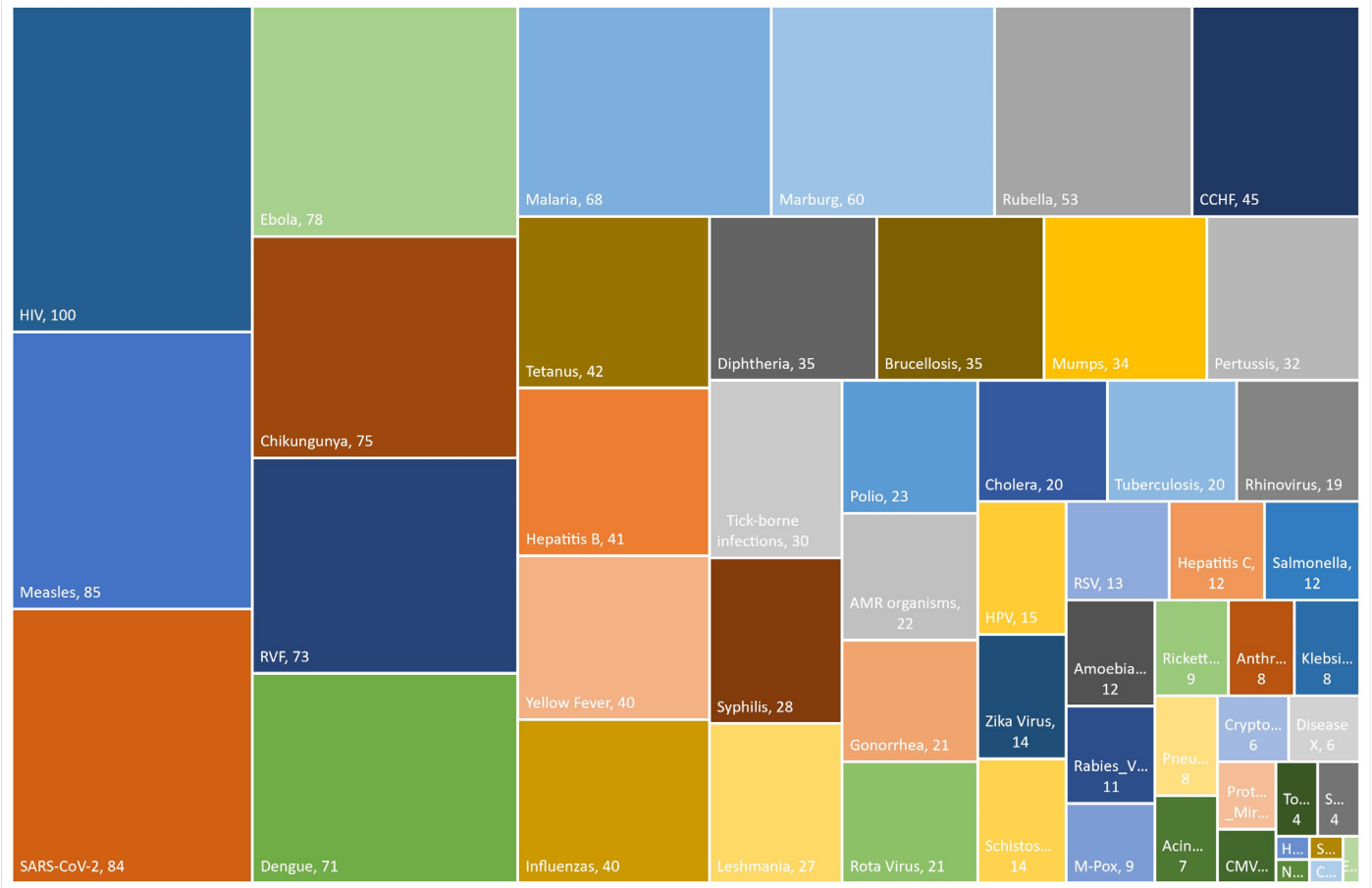


Figure 2: Response rate to invitation to interview



Abbreviation Key

AMR – Antimicrobial Resistant Microorganism
CCHF – Crimean-Congo Haemorrhagic Fever
CMV – Cytomegalovirus
HPV – Human Papillomavirus
HSV – Herpes Simplex Virus
RSV – Respiratory Syncytial Virus
RVF – Rift Valley Fever

Figure 3: Visual representation of all pathogens as ranked at individual interviews.

Table 1: Top ten pathogens as ranked at the individual interviews

Rank	Pathogen	Score	Key rationale for rank
1	HIV	100	Public health importance
2	Measles	85	Understand vaccine coverage
3	SARS-CoV-2	84	Epidemic potential, economic disruption
4	Ebola	78	Porous borders, outbreaks in Eastern DRC and Uganda
5	RVF	75	One Health, economic impact
6	Chikungunya	73	Climate change, vector spread
7	Dengue	71	Climate change, vector spread
8	Malaria	68	Public health importance
9	Marburg	60	Epidemic potential
10	Rubella	53	Congenital rubella syndrome

Workshop discussion, group work and resolutions

Workshop participants were then given the opportunity to discuss and agree upon the prioritization criteria that would guide the consensus building process, building from prioritization criteria used by the World Health Organisation Pandemic Hub.

After deliberation, the workshop participants adopted modified criteria addressing five domains:

- Potential epidemiological impact with respect to pathogen-specific outbreak potential, disease severity and impact on vulnerable populations
- Potential socioeconomic impact associated with a pathogen-specific outbreak
- Translational potential of pathogen-specific serosurveillance for disease control
- Absence of alternative, reliable, and efficient tools or platforms for pathogen-specific surveillance
- Technical feasibility of pathogen-specific serosurveillance

From the group work, there emerged five new pathogens not previously ranked in the top ten pathogens from the individual interviews. They were Hepatitis B virus, Typhoid fever, Influenza virus, Respiratory Syncytial Virus (RSV) and Cholera.

As ranking was varied in the groups without a clear point of convergence, it was then agreed that in the final ranking, all fifteen pathogens would be included. All workshop participants were offered the opportunity to individually rank the fifteen pathogens generated from the plenary. Table 2 is the final ranking from the plenary.
To give workshop respondents a final chance to rank the fifteen pathogens outside of the workshop atmosphere, perhaps after some reflection on rationale, we sent out a final poll. Table 3 is the final ranking after workshop attendants had had an opportunity to reflect on the pathogens from the plenary meeting.

Table 2: New ranking of pathogens at the consensus building workshop

Rank	Pathogen	Plenary Score
1	Measles	350
2	SARS-CoV-2	345
3	Cholera	280
4	Rift Valley Fever	280
5	HIV	265
6	Dengue	253
7	Malaria	252
8	Rubella	240
9	Chikungunya	234
10	Ebola	231
11	Hepatitis B	116
12	Typhoid	79
13	Influenza	78
14	RSV	71
15	Marburg	46

Table 3: Final Prioritization list of pathogens

Rank	Pathogen	Final Score
1	Measles	241
2	SARS-CoV-2	226
3	Cholera	197
4	Rift Valley Fever	184
5	Hepatitis B	174
6	Dengue	173
7	HIV	171
8	Malaria	170
9	Chikungunya	158
10	Influenza	149
11	Ebola	136
12	Typhoid	129
13	Rubella	126
14	RSV	106
15	Marburg	84

Summary

We set out to engage stakeholders to identify pathogens that should be prioritised for serosurveillance in Kenya. By combining individual interviews, group work and personalized voting, stakeholders identified 15 pathogens that should be prioritized.

We hope that both policy makers at the Ministry of Health and funding partners will support the adoption of consensus list of pathogens that should be prioritized for serosurveillance in Kenya.

Acknowledgements

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Study team

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